

VALUE THROUGH PERFORMANCE

DELTECH

# AP SERIES

BLOWER PURGE DESIGN  
DESICCANT DRYERS



# Regenerative Desiccant Compressed Air Dryer Models 1500 Through 15000 scfm



The Deltech AP Series desiccant dryers are designed for plant and instrument air applications where low dew points are required. The AP Series dryer operates on a standard 8 hour fully automatic NEMA Cycle. During this continuous process, one tower is drying the incoming wet air for 4 hours. During the same time period the other tower is being reactivated with heated atmospheric air. The heating of the atmospheric air is external to the tower and is controlled by a thermocouple at the heater outlet. No internal or embedded heaters are used. No cooling water or process purge air is required.

## Featured Components

**Valves** – High performance butterfly valves control the flow of air through the towers. Inlet and purge exhaust valves are cast iron bodies with stainless steel internals which provide good wear resistance and minimize maintenance.

**Heater** – The AP Series dryer is designed to use a low watt density heater with optimal surface area. Low watt density heaters mean lower heater sheath temperatures and extended heater life. Extended surface areas result in the most efficient heat transfer.

**Blower** – A positive displacement blower provides the regeneration purge for the system. This blower has the major advantage of providing a constant volume of purge air over a wide range of pressures. The positive displacement blower delivers a precise flow rate regardless of varying system pressure drop while using only the horsepower

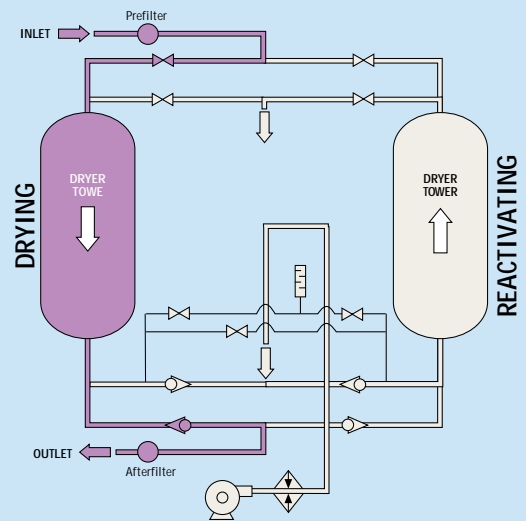
## Energy Management System

The Deltech AP Series dryer also has available an optional energy saving control system that senses the relative humidity of the process air as it exits the tower. Extended drying will take place if the relative humidity is below the calculated set point.

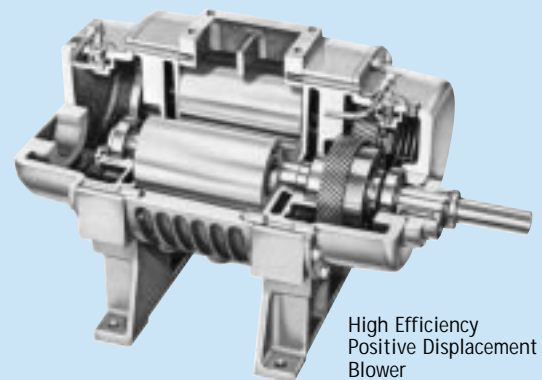
## Safety Features

- Low wattage heater tubes
- High temperature protection
- Thermostatically-controlled heater
- Control power transformer

## Flow Schematic



Butterfly  
Switching Valve

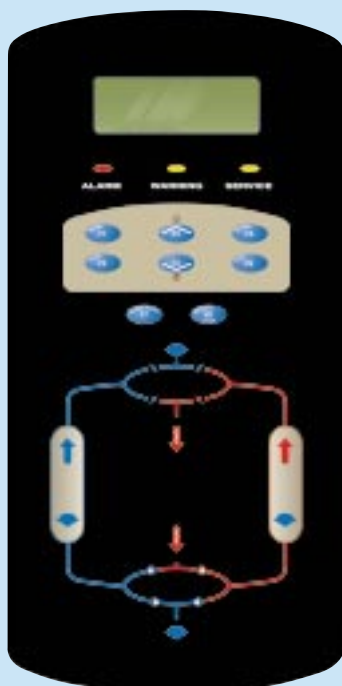


High Efficiency  
Positive Displacement  
Blower

# DELTECH

## DDCM Fiber Optic Controls

All dryer functions are controlled automatically by the new Digital Diagnostic Controls and Monitor (DDCM). The DDCM is designed using the latest in fiber optic microprocessor design. Its electronic circuitry provides reliable operation even where electrical noise, high temperatures and unreliable power exist.



DDCM Face Plate

### The DDCM is equipped with the following features:

- Backlit alphanumeric four line, 80 character LCD display to indicate set points, operating conditions, alarms and service phone number
- LCD capable of displaying in English and Spanish
- RS-232 communication port
- Fiber optic emitter output
- 3 front panel LEDs for alarm, warning and service
- 8-button keypad for retrieving diagnostic information and programming
- Battery backup to provide run time, time to service, alarm and warning

### The DDCM continuously monitors:

- Purge air exhaust temperature
- Tower bed temperatures
- Tower status
  - Drying
  - Depressurizing
  - Regenerating
  - Repressurizing
  - Standby

### The DDCM provides the following alarm and warning signals:

#### Alarms:

- Inlet fail (right and left chambers)
- Online pressure (right and left chambers)
- Depressurization failure (right and left chambers)
- Repressurization failure (right and left chambers)
- Thermocouple failure
- Blower motor overload
- Heater over temperature (optional)

#### Warnings:

- Heat timed out (right and left chambers)
- High humidity (with optional energy management)

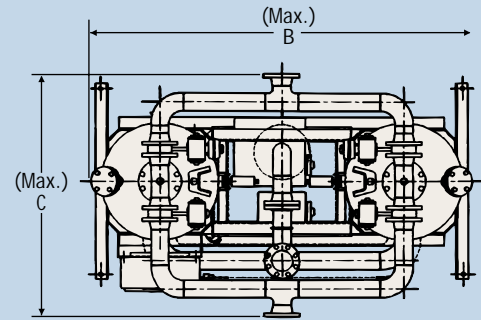
### The DDCM LCD displays the following information:

- Left and right chamber temperature
- Heater outlet temperature
- Heater bundle temperature
- Purge exhaust temperature
- Left and right chamber pressure (high and low)
- Alarm and warning history
- Run time, current drying time and current heating time
- LED test
- Filter, valve and desiccant service due
- Temperature scale selection (°F/°C)
- Communication baud rate
- Options enabled/disabled
- Language selection (English/Spanish)

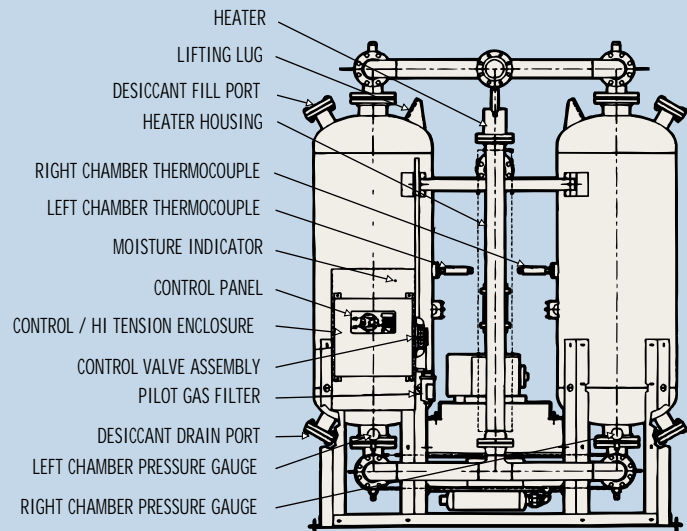
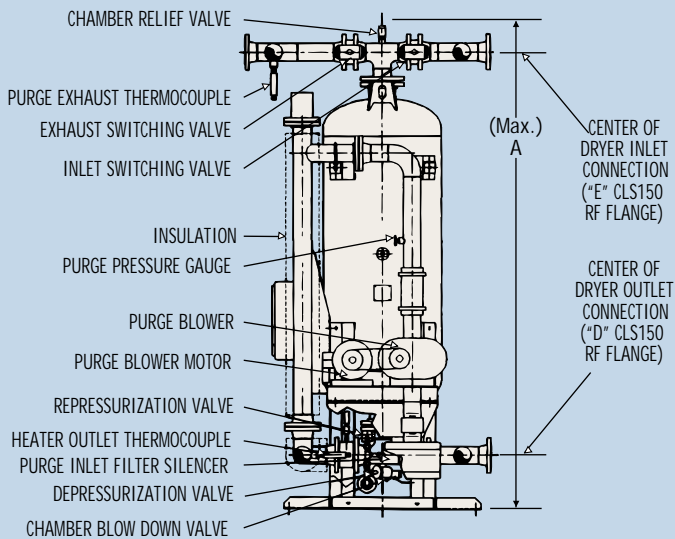
## Maintenance and Troubleshooting

With the DDCM you know exactly how your dryer is functioning and details of the dryer history. The DDCM catalogs information so that you can review past alarm conditions. This makes troubleshooting easier. The DDCM also has a built-in maintenance menu that reminds you when preventive maintenance is due and what type of maintenance is required. It even gives you a phone number to call if you need help.

## AP Series Desiccant Dryer Specifications



DRYER SIDE VIEW SHOWN WITH RIGHT CHAMBER REMOVED



Model <sup>1</sup>	Dimensions (inches)			Outlet "D"	Inlet "E"	Approx. Shipping Weight (lbs.) <sup>2</sup>	Blower (HP)	Heater (kW)	Recommended Filters	
	A	B	C						Prefilter	Afterfilter
AP1500	139	88	73	3	3	4200	5	26	D-1500-CF	DTHT-1800
AP2100	135	100	78	4	4	4500	5	38	D-2000-CF	DTHT-2400
AP2500	145	100	78	4	4	5100	7.5	42	D-2400-CF	DTHT-2400
AP3000	157	100	78	6	6	8600	7.5	53	D-3000-CF	DTHT-3600
AP3800	165	108	89	6	6	8800	7.5	70	D-4000-CF	DTHT-3600
AP4500	163	128	90	6	6	9100	10	84	D-5000-CF	DTHT-4800
AP5200	178	128	90	6	6	9800	15	90	D-5000-CF	DTHT-6000
AP7000	195	144	96	8	8	14000	25	117	D-7200-CF	DTHT-7200

1 Model number is flow rate in scfm at 100°F and 100 psig. For larger flows consult factory.

2 Desiccant shipped separately. Dryer weight does not include desiccant.



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